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DN 102:79718
OREF 102:12519a,12522a
ED Entered STN: 09 Mar 1985
TI (Meth)acrylic acid esters and their use
IN Schornick, Gunnar; Buethe, Ingolf; Jacobi, Manfred; Lenz, Werner; Lehnerer, Wolfgang
PA BASF A.-G. , Fed. Rep. Ger.
SO Ger. Offen., 16 pp.
CODEN: GWXXBX
DT Patent
LA German
IC C08G063-76; C08G065-32; C08G065-48; C09D003-64; C09D003-80
CC 37-2 (Plastics Manufacture and Processing)
Section cross-reference(s): 23
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3316593	A1	19841108	DE 1983-3316593	19830506
	EP 126341	A2	19841128	EP 1984-104853	19840430 <--
	EP 126341	A3	19870204		
	EP 126341	B1	19890201		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
PRAI	DE 1983-3316593	A	19830506		

AB The title esters, useful as reactive diluents in photocurable compns., are prepared by the acid-catalyzed esterification of polyester or polyether polyols (mol. weight 400-4000) with 100-150 equivalent% acid, azeotropic distillation of H2O, neutralization of the catalyst, and reaction of the excess acid with polyepoxides. Thus, stirring a polyester (OH number 320 mg KOH/g, from adipic acid 780, phthalic anhydride 420, ethylene glycol 600, and trimethylolpropane 560 parts) 1250, acrylic acid 582, H2SO4 5.5, p-MeOC6H4OH 1.8, Kerobit TBK 0.9, phenothiazine 0.04, and cyclohexane 916 parts at 110-110° with H2O distillation until the acid number was 44, adding Me2NCH2CH2OH 10.5, pentaerythritol triglycidyl ether [13236-00-5] 192, and thiodiglycol [111-48-8] catalyst 1 part, and stirring at .apprx.110° until the acid number was 2.6 gave a polyester acrylate [77107-23-4] with viscosity 47.5 mPa-s at 23°.

ST polyester acrylate manuf; acrylate polyol polymeric; esterification polyol acrylic acid; neutralization acrylic acid esterification; epoxide neutralization acrylic acid; glycidyl ether neutralization acid; catalyst esterification epoxide; thiodiethylene glycol catalyst esterification

IT Polyesters, compounds
RL: USES (Uses)
(acrylate esters, manufacture of, with excess acid neutralization by polyepoxides)

IT Esterification
(of polyester polyols, by acrylic acid, with excess acid neutralization by polyepoxides)

IT Esterification catalysts
(thiodiglycol, for methacrylic acid by polyepoxides)

IT Coating materials
(photocurable, reactive diluents for, polyester acrylates as)

IT 111-48-8
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for esterification of methacrylic acid by epoxides)

IT 13236-00-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification by, of excess methacrylic acid in polyol esterification)

IT 70225-90-0P 77107-23-4P 84777-80-0P 94765-45-4P
RL: PREP (Preparation)
(manufacture of, with excess acid neutralization by polyepoxides)

DERWENT-ACC-NO: 1984-283189

DERWENT-WEEK: 198916

TITLE: Polyester or polyether acrylate or methacrylate prodn. by esterification followed by reaction of residual acrylic or methacrylic acid with polyepoxide cpd.

INVENTOR: BUTHE I; JACOBI M ; LEHNERER W ; LENZ W ; SCHORNICK G

PATENT-ASSIGNEE: BASF AG[BADI]

PRIORITY-DATA: 1983DE-3316593 (May 6, 1983)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
DE 3316593 A	November 8, 1984	DE
EP 126341 A	November 28, 1984	DE
DE 3476535 G	March 9, 1989	DE
EP 126341 B	February 1, 1989	DE

DESIGNATED-STATES: BE CH DE FR GB IT LI NL SE BE CH DE FR GB IT LI NL SE

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
DE 3316593A	N/A	1983DE-3316593	May 6, 1983
EP 126341A	N/A	1984EP-104853	April 30, 1984
EP 126341B	N/A	1984EP-104853	April 30, 1984

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	C08F290/06	20060101
CIPS	C08G63/47	20060101
CIPS	C08G65/332	20060101
CIPS	C09D163/00	20060101
CIPS	C09D167/06	20060101
CIPS	C09D4/00	20060101

ABSTRACTED-PUB-NO: DE 3316593 A

BASIC-ABSTRACT:

(Meth)acrylate esters (I) of satd. polyesters (opt. contg. ether gps.) or polyethers contg. at least 2 OH gps. per mol. and having a no.-av. molecular wt. of 400-4000 are prepd. by reacting the polyester or polyether with 100-150 mole % (based on OH gps.) of (meth)acrylic acid in the presence of an acid catalyst, at least one water-azeotroping hydrocarbon and a small amt. of a polymerisation inhibitor. The reaction is effected at elevated temp. with azeotropic H2O removal. The hydrocarbon is then distd. off, the catalyst neutralised, and the residual (meth)acrylic acid reacted with an epoxide (II) contg. at least 2 epoxy gps. per mol. in an amt. equiv. to the acid no. until the acid no. is no more than 5 mg KOH/g.

USE/ADVANTAGE - Treatment with (II) eliminates laborious washing (cf.

FR2029567, DE2838691 and DE3106570) or vacuum distn. (cf. EP2866). Polyesters or polyethers with low OH functionality can be used (cf. EP54105), giving prods. with low viscosity and low water sensitivity.

TITLE-TERMS: POLYESTER POLYETHER ACRYLATE METHACRYLATE PRODUCE ESTERIFICATION FOLLOW REACT RESIDUE ACRYLIC METHACRYLIC ACID POLYEPOXIDE COMPOUND

DERWENT-CLASS: A14 A28

CPI-CODES: A05-E01; A05-H01; A10-E07B; A11-C02B; A12-B01;

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0595U; 0994U ; 1173U ; 5038U

POLYMER-MULTIPUNCH-CODES-AND-KEY-SERIALS:
Key Serials: 0004 0035 0036 0037 0038 0206 0212 0216 0218 0224 0229 1176 1279 1282 1288 1291 1319 1321 1327 1341 1373 1450 1460 1601 2009 2016 2020 2021 2043 2065 2072 2177 2194 2198 2206 2300 2303 2383 2385 2410 2493 2556 2585 2622 2654 2676 2718 2792 3075 3077 3182 3183 3205 3267
Multipunch Codes: 03- 038 040 075 106 130 133 143 144 146 147 155 157 160 163 165 169 170 171 172 177 199 207 220 221 226 231 239 246 26& 263 28- 293 298 335 336 341 353 357 359 399 400 402 406 408 44& 473 477 48- 51& 512 528 53& 54& 546 551 560 561 57& 575 58- 583 589 596 656 681 689 720 723

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: 1984-120153

PUB-NO: EP000126341A2

DOCUMENT-IDENTIFIER: **EP 126341 A2**

TITLE: Process for the preparation of esters of (meth)-acrylic acid, and their use.

PUBN-DATE: November 28, 1984

INVENTOR-INFORMATION:

NAME	COUNTRY
SCHORNICK, GUNNAR DR	N/A
BUETHE, INGOLF DR	N/A
JACOBI, MANFRED DR	N/A
LENZ, WERNER DR	N/A
LEHNERER, WOLFGANG DR	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
BASF AG	DE

APPL-NO: EP84104853

APPL-DATE: April 30, 1984

PRIORITY-DATA: DE03316593A (May 6, 1983)

INT-CL (IPC): C07C069/54, C07C067/08 , C07C067/26 , C09D003/80

EUR-CL (EPC): C07C067/08 ; C07C067/26, C07C069/54 , C08F290/06 , C08G063/47 , C08G065/332 , C09D004/00 , C09D163/00 , C09D167/06

US-CL-CURRENT: 560/205

ABSTRACT:

1. A process for preparing an ester of acrylic or methacrylic acid with a hydroxyl-containing organic compound, which comprises esterifying a saturated polyester which contains no fewer than 2 free hydroxyl groups per molecule and may contain ether groups or a saturated polyether which contains no fewer than 2 free hydroxyl groups per molecule, this polyester or polyether having an average molecular weight ?Mn of from 400 to 4,000, with from 100 to 150 mol %, based on the OH groups of the polyester or polyether, of acrylic acid or methacrylic acid in the presence of an acidic esterification catalyst and one or more hydrocarbons forming an azeotropic mixture with water and a small amount of a polymerization inhibitor at elevated temperature with azeotropic removal of the resulting water, after the esterification removing the hydrocarbon by distillation and after neutralization of the esterification catalyst reacting the remaining acrylic or methacrylic acid with an amount, equivalent to the acid number, of an epoxy compound having no fewer than two epoxy groups per molecule until an acid number =< 5 mg of KOH/g is obtained.